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CHANGING PRODUCTIVITY AND EFFICIENCY OF FROZEN FOOD LOCKER COOPERATIVES

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FARMER COOPERATIVE SERVICE
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Farmer Cooperative Service conducts research; advises directly with cooperative leaders and others; promotes cooperative organization and development through other Federal and State agencies; and publishes results of its research, issues News for Farmer Cooperatives, and other education material.

This work is aimed (1) to help farmers get better prices for their products and reduce operating expenses, (2) to help rural and small-town residents use cooperatives to develop rural resources, (3) to help these cooperatives expand their services and operate more efficiently, and (4) to help all Americans understand the work of these cooperatives.

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Summary and Conclusions

Between 1960 and 1965, more than a third of the estimated 600 frozen food locker cooperatives discontinued operations; some had closed their plants and others were still operating, but not as cooperatives. Frozen food locker cooperatives still operating must plan to change their operations to remain solvent. This study had two purposes: To determine what changes in operations occurred in a group of cooperatives that stayed in business, and to assess the characteristics common to the firms that discontinued cooperative locker plant operation.

The following changes in operation between 1960 and 1965 in the continuing group appear to be most significant:

- Average gross operating revenue increased very slightly--from \$20,200 to \$20,300. Custom services continued to be the most important source of revenue, accounting for nearly 60 percent of average gross revenue.
- Average number of patrons declined from 523 to 425. During the same period of time, average sales per patron increased by 24 percent. This suggests that greater emphasis was placed on more custom service, such as slaughtering and processing, for fewer patrons.
- Average meat processing volume declined about 6 percent; however, meat processed per patron increased by 16 percent, from 379 pounds to 438 pounds.
- Annual slaughter volume declined from 872 animals to 755 animals--nearly 14 percent. The number of hogs slaughtered declined 33 percent.

- Locker rentals declined by 24 percent--from 295 lockers to 225 lockers. Some unrented lockers were removed to provide additional bulk storage space.
- An increasing number of cooperatives offered various merchandising services, such as selling meat as wholesale cuts, and in prepacked boxes, and maintaining inventories of frozen retail cuts of meat, in an effort to maintain patronage and increase levels of output.

Comparisons between cooperatives remaining in operation and those that were discontinued by 1965 are based on 1960 data. Highlights of the comparison were as follows:

- Excluding the four largest ones, the average discontinued cooperative processed only 38 percent as much meat as the continuing cooperative even though both groups had the same number of employees.
- The average discontinued cooperative had 30 percent fewer patrons and processed only half as much meat per patron as did the average continuing cooperative--197 pounds compared with 379 pounds.
- Custom services provided relatively less gross operating revenue for the average discontinued cooperative than for the average continuing one.
- The average discontinued cooperative had 10 percent more lockers installed but rented nearly 20 percent fewer than did the average continuing cooperative.

Performance--operating efficiency and labor productivity--of the group of continuing locker cooperatives declined between 1960 and 1965. For instance, both volume of product handled and demand

for other services were less in 1965 than in 1960 with no change in the number of employees. Several characteristics associated with discontinued cooperatives in 1960 were apparent in the average continuing cooperative in 1965--especially number of patrons served, number of lockers rented, and volume of pork cured.

Although both volume of output and size of the locker plant are important, they are not the critical elements to economic survival. Rather, improved labor productivity, efficient use of available plant facilities, and special attention to custom services appear to be the principal considerations.

Changing Productivity and Efficiency of Frozen Food Locker Cooperatives

By

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This report analyzes the nature and extent of changes in frozen food locker cooperatives from 1960 to 1965, evaluates the effects these changes had on overall performance of a group of locker cooperatives, and identifies characteristics common to cooperatives that discontinued operations between 1960 and 1965. Further research is underway that will build upon this study. It will probe in depth into several important factors contributing to successful operations of cooperative frozen food locker plants.

Information for this study was obtained from questionnaires completed by frozen food locker cooperatives during the 1960 and 1965 national surveys of the frozen food locker and freezer provisioning industry conducted by the Farmer Cooperative Service. Questionnaires from cooperatives in the 1965 survey were matched with those submitted by the same organizations in 1960. In all, operational data were available from 119 frozen food locker cooperatives in 1965.

In addition, 48 locker cooperatives submitted usable questionnaires in the 1960 national survey but discontinued operating as cooperatives before the 1965 survey.

Of the 48 discontinued locker cooperatives, 4 were excluded from the analysis because they had average volumes far greater than the typical (modal) volumes for their group. However, none of the 119 continuing locker cooperatives were excluded from the analysis since their average and typical volumes were very similar.

Characteristics of Cooperatives That Remained in Operation

The 119 locker cooperatives that supplied information for this part of the study were distributed over the United States as shown in the following tabulation:

<u>Region</u>	<u>Percent</u>
North Atlantic	3
North Central	78
South Atlantic	2
South Central	6
Mountain	4
Pacific	7
Total	100

This regional distribution was generally the same for all locker cooperatives (about 400) in 1965. Moreover, distribution by size of town was similar to all locker cooperatives; approximately 60 percent were located in communities of 1,000 or fewer people.

Approximately three-fourths of the 119 locker cooperatives were affiliated with other farmer cooperative businesses.

Patronage

Patronage includes number of patrons, dollar sales of products and services, and average sales per patron. Each item is treated separately and, where useful, interrelations are shown.

About 20 percent fewer patrons were served in 1965 than in 1960, by the locker cooperatives studied, as the following tabulation shows:

<u>Year</u>	<u>Number of patrons served per cooperative</u>
1960	523
1965	425

Nearly a fourth reported increasing numbers of patrons between 1960 and 1965; another fourth reported no change or provided insufficient data and the remaining half of the cooperatives reported declining numbers of patrons. The declines much more than offset the increases.

Average gross revenue remained substantially the same between 1960 and 1965 as the following tabulation shows:

<u>Year</u>	<u>Average gross revenue</u>
1960	\$20,167
1965	20,262
Increase over 1960	95

Cooperatives in communities with 1,000 or fewer people (about 60 percent of the 119) reported an 11-percent increase in average gross revenue, from about \$13,000 in 1960 to nearly \$14,400 in 1965. On the other hand those locker cooperatives located in communities with over 1,000 people reported average gross revenue unchanged at about \$28,000 for 1960 and 1965. On a weighted basis for all cooperatives reporting, the increase in average gross revenue was less than 1 percent between 1960 and 1965.

Table 1.--Composition of total sales per operating locker cooperative, 1960 and 1965

Source	1960		1965	
	Dollars	Percent	Dollars	Percent
Custom services	11,798	58	12,015	59
Sale of meat and poultry	7,381	37	7,578	37
Sale of other frozen foods	403	2	567	3
Sale of homefreezers	161	1	0	0
Other sales	424	2	102	1
Total	20,167	100	20,262	100

Custom services, the initial purpose of locker cooperatives, still plays an important part in their operation--they provide almost 60 percent of the average gross revenue. Revenue from the sale of plant-owned meat and poultry remained at 37 percent of average revenue for both 1960 and 1965. Sale of frozen foods packed by other processors increased from 2 percent of average revenue in 1960 to 3 percent in 1965. The few locker cooperatives that sold homefreezers in 1960 discontinued this activity by 1965.

Although composition of average gross revenue changed very little between 1960 and 1965, average gross revenue per patron did. It increased from \$39 per patron in 1960 to \$48 in 1965, or 24 percent.

Output

Seventy-nine percent of the locker cooperatives processed meat and poultry in 1965--no change from 1960. Average processing volume, however, declined 6 percent between those years--from about 198,000 pounds in 1960 to about 186,000 in 1965. On the other

hand, meat and poultry processed per patron increased from 379 pounds in 1960 to 438 pounds in 1965, a 16-percent increase, which suggests increased attention to the food needs of a smaller group of patrons.

A few more locker cooperatives operated slaughtering facilities in 1965 than in 1960--44 and 43 percent, respectively. Those operating slaughter facilities in 1960 slaughtered an average of 872 animals--nearly two-thirds was hogs and one-third was beef. Five years later, average volume had declined 14 percent and composition of that volume had changed considerably--755 animals per cooperative, half of them beef and about half hogs (table 2).

Table 2.--Composition of average slaughter volume, 1960 and 1965, and the change since 1960

Class	1960		1965		Change since 1960	
	Number	Percent	Number	Percent	Number	Percent
Beef	304	35	374	50	+70	+23
Hogs	553	63	370	49	-183	-33
Sheep	15	2	11	1	-4	-27
Total	872	100	755	100	-117	-14

Locker cooperatives with curing facilities in 1960 cured an average of 31,000 pounds of pork, compared with an average of 16,500 pounds in 1965--a 47 percent decline. The proportion of cooperatives having facilities for curing and smoking pork also dipped slightly, from 40 to 38 percent.

Employment

The average locker cooperative employed 3 people in both 1960 and 1965. This meant the same number of employees were processing less volume

in 1965 than they were in 1960. The obvious result was lower productivity and higher unit costs.

Lockers Installed and Rented

Although all locker cooperatives reported renting lockers in both 1960 and 1965, they generally had fewer lockers installed and rented on January 1, 1965, than on January 1, 1960, as the following tabulation shows:

Year	Average no. of lockers		No. rented as percentage of no. installed
	Installed	Rented	
1960	372	295	79
1965	346	225	65

Commercial Operations and Merchandising Activities

By 1965 an increased proportion of locker cooperatives had expanded their operations to include selected commercial operations and merchandising activities (tables 3 and 4).

Table 3.--Percentage of locker cooperatives engaged in specific commercial operations, 1960 and 1965

Operation	1960	1965
	Percent	Percent
Bought livestock for slaughter and resale	20	24
Produced cured meat for sale	26	30
Produced sausage for sale	24	30
Produced portion-controlled meat items for sale	4	5

The proportion of locker cooperatives that bought locally produced livestock for slaughtering, processing, and resale, and the proportion that produced cured meat for sale, each increased 4 percentage points between 1960 and 1965. Nearly a third of the cooperatives produced sausage products for sale in 1965, up 6 percentage points from 1960. Although a slight increase was reported in the number of cooperatives producing portion-controlled meat items for sale in 1965, the total was still very low--5 percent.

The proportion of locker cooperatives engaged in selected merchandising activities generally increased between 1960 and 1965 (table 4).

Table 4.--Percentage of locker cooperatives engaged in specific merchandising activities, 1960 and 1965

Activity	1960	1965
	<u>Percent</u>	<u>Percent</u>
Sold packer-slaughtered meat in wholesale cuts	27	29
Sold foods packed and frozen by other plants	18	25
Sold frozen meats in prepacked boxes or bundles	8	12
Maintained an inventory of frozen packaged meat cuts	7	11
Financed or arranged financing for 60 days or more for bulk food sales	13	9
Provided food delivery service	6	5

An increased proportion of locker cooperatives were purchasing animal carcasses dressed by other meat packers and purchasing frozen foods packed by other firms for resale--up 2 and 7 percentage points respectively between 1960 and 1965.

Since 1960, managers of an increasing number of locker cooperatives have been offering various merchandising services. Merchandising is a fairly new business area for many frozen food locker cooperatives and requires new and improved management skills. Managers have been developing these activities slowly because of several complex operational problems. Three of these problems are developing a product mix that meets patron demands, maintaining and controlling an inventory, and financing customer purchases. Another problem is maintaining adequate sales volume at a margin sufficient to cover costs and add to net revenue. Meeting competition from supermarkets has become increasingly difficult for locker cooperatives handling frozen foods packed by other firms.

Not all merchandising activities have trended upwards since 1960. Two exceptions were (1) a 4-percentage-point decline in proportion of cooperatives arranging financing for bulk quantity food purchases, and (2) a 1-percentage-point decline in the proportion of cooperatives providing food delivery service.

Effects of Changes in Operations on Performance of Locker Cooperatives

Changes between 1960 and 1965 in frozen food locker cooperatives indicate that operational efficiency and labor productivity of these firms had declined.

Custom services provided by locker cooperatives have an interlocking relationship with one another.

A change in the demand for one particular service affects the demand for several related services. For instance, locker cooperatives slaughtering live-stock averaged about 14 percent fewer animals in 1965 than in 1960. Hog slaughter volume alone declined 33 percent during that time and more than offset the slight gain in beef volume. Because fewer hog carcasses were available for processing in 1965, less pork was available for sausage making, curing and smoking, and lard rendering. Thus, reduced slaughter volume had an impact on the demand for several related custom services.

Average volumes of meat processed and pork cured declined 6 and 47 percent, respectively, between 1960 and 1965. These declining volumes had a far-reaching effect--the full impact of which has yet to be measured--on a large number of locker cooperatives, since nearly 80 percent of locker cooperatives processed meat and 40 percent of them cured pork in 1965.

These lower average volumes of output--slaughtering, processing, and curing--were produced by the same number of employees in 1965 as in 1960.

Although all locker cooperatives rented 0°F. food storage space in 1965, the average numbers of lockers installed and lockers rented declined 7 and 24 percent, respectively, since 1960. Even though some lockers were removed and the space was used for bulk storage of frozen foods, more than one-third of the remaining lockers were unrented on January 1, 1965, which increased unit costs of operating the locker room.

Characteristics of Discontinued Locker Cooperatives

Forty-eight locker cooperatives completed questionnaires in the 1960 national survey but had discontinued operations as cooperatives by 1965. Some

closed their plants and others changed ownership. Nearly one-third of these 48 firms were operating as noncooperative commercial plants in 1965.

Data on the 48 discontinued cooperatives were analyzed to identify any significant operational characteristics that might be associated with that particular group.

The discontinued locker cooperatives were distributed around the country quite similarly to the continuing cooperatives; about 75 percent were located in the North Central Region of the United States. Moreover, over half of them were located in rural towns of 1,000 or fewer people, like the continuing group.

Information was not available in 1960 to show the affiliation of discontinued locker cooperatives. However, another FCS report¹ indicates that between 1955 and 1965 more nonaffiliated locker cooperatives discontinued operations than those affiliated with other businesses.

Processing volume data from all 48 cooperatives were arrayed, and an average (mean) and typical (mode) were calculated. The average volume of all 48 firms--148,000 lb.--was far greater than the typical volume--80,000 lb.--of this group. Four larger discontinued cooperatives had average processing volume of 566,000 lb. while the other 44 firms had an average of 75,000 lb. The four large firms, therefore, were excluded from the tabulation and the new average was very similar to the typical volume. Thus, all analyses for the discontinued group are based on 44 cooperatives, rather than 48 cooperatives.

The average discontinued cooperative served about 30 percent fewer patrons in 1960 than the

¹ William R. Seymour. An Appraisal of Frozen Food Locker Cooperatives, 1965. U.S. Dept. Agr., Farmer Cooperative Serv. Gen. Rpt. 139, Jan. 1967.

average continuing one--381 patrons compared with 523 patrons.

Gross operating revenue in 1960 was approximately 5 percent less for the average discontinued cooperative than for the average continuing one--\$19,200 ² and \$20,200, respectively.

Composition of gross operating revenue indicated that the average discontinued cooperative did not promote custom services including locker rentals to the same relative extent as continuing cooperatives (table 5). Rather, they promoted the sale of plant-owned meat, poultry, and other frozen foods.

Table 5.--Average gross operating revenue, discontinued and continuing cooperatives, 1960

Source	Average sales per --			
	Discontinued cooperative		Continuing cooperative	
	<u>Dollars</u>	<u>Percent</u>	<u>Dollars</u>	<u>Percent</u>
Custom services	9,592	50	11,798	58
Sale of meat & poultry	7,865	41	7,381	37
Sale of other frozen foods	767	4	403	2
Sale of home-freezer	0	0	161	1
Miscellaneous sales	959	5	424	2
All sources	19,183	100	20,167	100

² The 4 large discontinued cooperatives had average gross operating revenues of \$84,000. Had these 4 plants been included with the other 44 cooperatives, the group average gross operating revenue would have been increased by more than \$6,000.

It is important to remember also that income from sale of products has to be reduced by cost of goods sold to be comparable to income from custom services. To put it another way, a plant would have to sell \$100 worth of products for which it paid \$80 to equal \$20 from custom services--without, of course, considering such all-operation costs as labor and the like.

Volumes of output for the average discontinued cooperatives were considerably below those volumes reported by the average continuing plant as the following tabulation shows:

<u>Type of output</u>	<u>Average volumes</u>	
	<u>Discontinued cooperatives</u>	<u>Continuing cooperatives</u>
Number of animals slaughtered	595	872
Pounds of meat processed	75,000	198,000
Pounds of pork cured	15,500	31,300

These data show a contrast in levels of output between the two groups. The average continuing cooperative slaughtered nearly 50 percent more livestock than did the average discontinued cooperative. Even more striking are the differences in pounds of meat processed and pork cured--two and one-half times and twice as much, respectively.

These larger volumes by the continuing cooperatives were produced by the same number of employees as in the discontinued cooperatives, an average of 3 employees per plant for each group. These data suggest that discontinued cooperatives had lower labor productivity and higher unit costs of output.

Efficient use of facilities and labor is a more important measure than simply gross volume of output in appraising the success of a frozen food

locker cooperative. For example, in 1960 only 3 percent of the continuing cooperatives reported higher volumes of output than the average for the four largest discontinued cooperatives. Furthermore, a fourth of the continuing cooperatives reported lower processing volumes than the average discontinued cooperative--75,000 pounds of meat.

The average discontinued cooperative had 10 percent more lockers available to rent than the continuing one--407 lockers compared with 372; however, it rented fewer of them--247 compared with 295.

Proportionally, the average discontinued cooperative also rented fewer of its installed lockers than the average continuing one--61 percent and 79 percent, respectively.³

More discontinued cooperatives engaged in merchandising and commercial activities than did continuing ones. For instance, a third of the discontinued plants purchased locally produced livestock for slaughtering, processing, and reselling, compared with one-fifth of the continuing firms. More of them purchased carcasses for resale also. Nevertheless, the discontinued cooperatives were apparently unable to build any significant additional volume by providing these services.

In summary, data on 1960 operations indicate that the average discontinued cooperative was considerably smaller than the average continuing cooperative when measured in terms of volume of meat processed and pork cured, number of livestock slaughtered, number of lockers rented, and number of patrons served. The data further suggest that size alone is not the answer to economic survival. Controlled costs of operation and high labor productivity, both dependent upon skilled management, appear more important.

³ The four large discontinued cooperatives had an average of 1,820 lockers installed and 1,050 lockers rented (58 percent of those installed).

Other Publications Available

An Appraisal of Frozen Food Locker and Freezer Provisioning Cooperatives. By William R. Seymour and Bert D. Miner. General Report 139.

Frozen Food Locker and Freezer Provisioning Industry, 1965. By Bert D. Miner, William R. Seymour, and Richard P. Parsons. Marketing Research Report 779.

Guide to Uniform Accounting for Locker and Freezer Provisioners. By Thornton W. Snead, Sr., and P. C. Wilkins. Agriculture Handbook 163.

Organizing a Farmer Cooperative, FCS Circular 18.

A copy of each of these publications may be obtained upon request while a supply is available from--

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